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INSTITUTE FOR DEFENSE ANALYSES

**Recommendations for Improving Joint  
Reception, Staging, Onward Movement,  
and Integration (RSOI)**

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## PREFACE

This document was prepared by the Institute for Defense Analyses (IDA) for the Joint Staff, Director for Logistics (J-4) in partial response to the task *Intratheater Lift Analysis (ILA)*, requested by the Joint Requirements Oversight Council (JROC). The Mobility Concepts Agency (MCA) recently has been tasked with developing Joint RSOI doctrine, which is expected to be released (in draft) by March 1997. The recommendations contained in this report are intended to support the MCA effort.

Other organizations participating in the ILA effort included the Joint Staff/J-4 Mobility, OSD/PA&E, U.S. Transportation Command, U.S. Central Command, U.S. Pacific Command, U.S. Forces Korea, the Defense Logistics Agency, other Joint Staff directorates, and the Services.

The IDA Technical Review Committee was chaired by Mr. Thomas P. Christie and consisted of RADM Samuel H. Packer, USN (Ret.), Mr. Richard S. Miller, and Dr. William J. Sheleski.

# **RECOMMENDATIONS FOR IMPROVING JOINT RECEPTION, STAGING, ONWARD MOVEMENT, AND INTEGRATION (RSOI)**

<b>SUMMARY.....</b>	<b>1</b>
A. Background.....	1
B. Study Objectives.....	1
C. Doctrinal Concepts for Joint RSOI.....	2
1. The Joint RSOI Process and Projection of U.S. Military Capabilities.....	2
2. The Lines of Communication.....	3
3. Theater Level RSOI Organizations to Plan and Execute RSOI Operations.....	3
4. Joint Terminology for RSOI Operations.....	3
5. Joint and Combined Infrastructure and Support.....	3
6. RSOI Planning and Execution Systems.....	4
D. Organization of Report.....	4
<b>DISCUSSION.....</b>	<b>7</b>
A. Projection of U.S. Military Capabilities.....	7
B. The Joint RSOI Process.....	8
C. Lines of Communication.....	9
1. Physical Composition of the LOC.....	10
2. Workloads of the Theater Lines of Communication.....	12
3. Organizations that Operate the Theater LOC.....	13
4. Reception Complexes.....	14
5. Supporting Nodes of the Theater LOC.....	16
D. Joint RSOI Organizational Structure.....	17
1. Theater Support Command/Joint Theater Support Command.....	17
2. Joint Movement Control.....	20
E. Joint RSOI Terminology.....	22
F. Joint and Combined RSOI Infrastructure.....	23
G. Joint RSOI Planning and Execution Systems.....	25
1. Strategic Versus Theater Workload Planning.....	26
2. Transportation-Related Information Requirements.....	27
3. RSOI Execution Information Requirements.....	27

Appendix A – Acronyms  
Appendix B – Bibliography

## **LIST OF FIGURES**

1. Segments of the Lines of Communication.....	10
2. Notional Theater LOC.....	11
3. CASCOM Theater Support Command Organizational Structure.....	19
4. Proposed Joint Theater Support Command Organizational Structure.....	20

## **SUMMARY**

### **A. BACKGROUND**

In recent years, U.S. military forces have moved from a forward based posture to one that relies on force projection. Substantial resources have been committed to enhance the U.S. strategic mobility capability, including the prepositioning of equipment afloat and ashore. Little emphasis, however, has been given to improving the capability of the theater lines of communication (LOC) to receive and process arriving forces and sustainment.

There is currently limited approved joint or Service doctrine to guide Joint Reception, Staging, Onward Movement and Integration (RSOI) operations within the theater of operations, and many organizations assigned RSOI tasks are not equipped or trained to perform these tasks. The Mobility Concepts Agency (MCA) is in the process of developing Joint RSOI doctrine, the first draft of which is scheduled for release in April 1997. This doctrine will be published as a Joint Tactics, Techniques and Procedures (JTTP) publication (Joint Pub 4-01.8). In addition, the U.S. Army's Joint Deployment Training Center (JDTC) at Fort Eustis is in the process of developing Army RSOI doctrine. The first draft of this doctrine was published in August 1996 as FM 100-17-3.

This paper describes the Joint RSOI process and its role in projecting U.S. military capabilities in response to contingencies throughout the world. It also describes Joint RSOI operations and other activities that are carried out at the same time within the theater LOC and proposes a number of issues that need to be addressed in emerging Joint RSOI doctrine. This paper also recommends a joint theater level organizational structure to plan and control RSOI operations effectively and efficiently for the supported combatant commands.

### **B. STUDY OBJECTIVES**

The Intratheater Lift Analysis (ILA) objectives were as follows:

- To re-examine the intratheater aspects of strategic mobility across the specified range of alternative scenarios.
- To propose remedial options to achieve needed capabilities.

IDA performed this work in two phases. In Phase I we assisted the Joint Study Team with formulating the study plan and conducting the analysis to identify mobility shortfalls and solutions using the MRS BURU West/East case (see Department of Defense, Joint Chiefs of Staff, Intratheater Lift Analysis, 15 July 1996).

The Phase II objective of the IDA task was to provide specific doctrinal and force structure recommendations to enable the U.S. joint forces to conduct RSOI and sustainment operations in any environment or geographic area. Specifically, IDA was tasked to identify doctrinal changes that may facilitate accomplishment of RSOI and sustainment, and to recommend an intratheater support structure to accomplish RSOI. To do this, we analyzed several planned or actual deployments to various theaters. We also reviewed existing joint doctrine and draft Army doctrine as it relates to the conduct of RSOI, as well as the existing theater organizational structures.

### **C. DOCTRINAL CONCEPTS FOR JOINT RSOI**

Although there is joint doctrine covering some aspects of the RSOI process, such as Water Terminal Operations, Movement Control, and Rear Area Security, no joint doctrine is devoted to the actual assembly of combat capability. Combatant commanders are prone to "front-load" as much combat capability as possible into their "deployment plan" (time-phased force and deployment data (TPFDD)). However, this practice can succeed only if the theater of operations is capable of receiving and processing the workload. Mountains of personnel and materiel bottlenecked at reception complexes are vulnerable to enemy action and create other logistical problems. As Joint RSOI doctrine is developed, several key concepts must be considered to make the projection of combat capability into the theater more effective:

#### **1. The Joint RSOI Process and Projection of U.S. Military Capabilities**

- Joint RSOI should be addressed as an operational mission that accelerates the build-up of combat power in theater.
- Increases in strategic mobility capabilities need to be matched by enhancements in the supported command's ability to receive and process the workload.

## **2. The Lines of Communication**

- Joint doctrine should describe the composition of the entire LOC and clarify responsibilities for its operation among the combatant commands.
- Joint doctrine should specify the structure, functions and operation of the theater LOC, including the command relationships and responsibilities for its operation.
- Doctrine should recognize other simultaneous workloads on the theater LOC and establish procedures to take these into account when identifying the nodes and routes needed for RSOI operations.
- Doctrine should identify all of the type nodes that a theater LOC is likely to require and specify the facilities and organizational elements each will need for RSOI.
- Doctrine should identify the capabilities of organizations that will be needed to operate the nodes of theater LOC, across a range of contingencies and manning options.
- Doctrine should identify which organizational elements are responsible for specific RSOI functions that occur within the reception complexes, as well as the command and control arrangements for these elements.
- Doctrine should describe how deploying units should flow through the nodes to reduce congestion, vulnerability, and life support requirements.

## **3. Theater Level RSOI Organizations to Plan and Execute RSOI Operations**

- Doctrine should describe a Joint Theater Support Command (JTSC) capable of planning and operating the theater LOC and Joint RSOI operations for the supported combatant commander.
- Doctrine should describe a Joint Movement Control Agency (JMCA) capable of exercising movement control execution authority for the supported combatant commander.

## **4. Joint Terminology for RSOI Operations**

- Joint doctrine should include a glossary of consistent and accurate RSOI terminology to be used to plan and execute all Joint RSOI and theater LOC operations.

## **5. Joint and Combined Infrastructure and Support**

- Doctrine should highlight the importance of addressing host nation support requirements in peacetime.

- Doctrine should specify that the supported combatant command is responsible for negotiating host nation support agreements. The JTSC should be the principal agent for determining the joint requirements and concluding detailed arrangements for their implementation.
- Doctrine should identify the U.S. command and control arrangements for theater LOC operations and describe the coordinating mechanism subordinate commanders will use to ensure effective and responsive RSOI operations during joint and combined contingency responses.
- Doctrine should identify the types of support that might be furnished by host nation support, contractors, and Allies that can be used to offset deploying the U.S. military capabilities.

## **6. RSOI Planning and Execution Systems**

- Doctrine should identify the need to assess the capability of the planned theater LOC to conduct simultaneous RSOI, sustainment, and retrograde operations in accordance with the supported commander's requirements before a deliberate or crisis action plan is judged to be feasible.
- Doctrine should establish the requirement for a theater TPFDD and describe the level of detail that is needed to accomplish theater LOC planning and execution of RSOI, sustainment, and retrograde operations.
- Doctrine should specify the type of transportation-related information, the currency of the information, and the level of detail that is required to plan and conduct RSOI operations.
- Doctrine should provide a comprehensive definition of force tracking and specify the data and information requirements needed to accomplish the task.

## **D. ORGANIZATION OF REPORT**

Following this summary is the main body of the report consisting of seven sections. Each section includes recommendations (summarized above) for inclusion in Joint RSOI doctrine. Section A discusses recent enhancements in strategic mobility capabilities and the lack of emphasis on planning and operating the theater LOC. Section B defines the RSOI process. Section C provides information relating to the structure and operation of the LOC. Section D discusses Joint RSOI theater organizational structure and the need for a single theater support command. Section E explains the need for approved, standardized terminology for Joint RSOI. Section F addresses joint and combined infrastructure issues, and host nation support considerations. Finally, Section



G discusses Joint RSOI planning and execution and the need for the development of a theater TPFDD.

## DISCUSSION

### A. PROJECTION OF U.S. MILITARY CAPABILITIES

*Joint RSOI doctrine should emphasize that, in order to reassemble combat capability in theater rapidly, improvements in the strategic mobility triad will require increased attention to planning the resources dedicated to operation of the theater LOC and the execution of Joint RSOI operations.*

In recent years, tremendous resources have been directed at enhancing the strategic mobility triad, which is composed of strategic airlift, strategic sealift, and prepositioning, both afloat and ashore. Programs such as the Army Strategic Mobility Program (ASMP), the acquisition and conversion of 19 Large, Medium Speed Roll-on/Roll-off (LMSR) Vessels, the acquisition of the C-17 airlift aircraft, and the increase in prepositioning ashore and afloat will result in a significant increase in capability. Once these enhancements are completed, the strategic deployment system will have slightly more than twice the current capacity, and be capable of delivering passengers and materiel to a theater approximately twice as fast as during Operation Desert Shield/Desert Storm.

But along with increased deployment capability, successful force projection depends upon the ability to rebuild combat capabilities rapidly after materiel and personnel arrive in theater. Build-up is accomplished by receiving personnel and equipment, reuniting personnel (who normally move by air) with equipment (which normally moves by sea), moving this capability to a location where it can become combat ready, and finally, integrating the capability into a military force capable of accomplishing the assigned mission. These operations, when considered collectively, are referred to as Reception, Staging, Onward Movement and Integration.

Although joint doctrine exists for Airlift Support (Joint Pub 4-01.1), Sealift Support (Joint Pub 4-01.2), Movement Control (Joint Pub 4-01.3), Water Terminal Operations (Joint Pub 4-01.5), and Joint Logistics Over the Shore (Joint Pub 4-01.6), currently there is no joint doctrine devoted to the reassembly of combat power in a theater of operations through RSOI. There also is no joint doctrine to guide planning and operation of theater lines of communication (LOC), the foundation upon which RSOI, sustainment, retrograde, and redeployment operations are conducted.

*Joint RSOI doctrine should describe the procedures and command arrangements to be used to effect seamless transition of responsibilities between USTRANSCOM and the supported combatant command. In addition, these procedures should ensure that the strategic flow into theater is no greater than the capacity of the theater LOC to process the flows.*

One goal of deployment is a seamless flow from fort-to-foxhole without building mountains of materiel at the reception complexes (ports of entry) or other nodes in the theater LOC. This requires a seamless transition from U.S. Transportation Command (USTRANSCOM) responsibility to supported combatant command responsibility within the reception complexes. The capability of USTRANSCOM to move personnel and materiel into the reception complexes must be matched to the supported command's capability to receive and process the workload.

In order to assemble combat capability rapidly, effectively, and efficiently in theater, the combatant commander must control the rate as well as the sequence of the flow of deploying forces and materiel. Although this may result in slowing down the strategic lift to reduce congestion, thereby causing less than optimal use of strategic airlift and sealift resources, the overall objective is to optimize throughput from "fort-to-foxhole," not just from "port-to-port" or "fort-to-port-to-port."

## **B. THE JOINT RSOI PROCESS**

*RSOI operations reassemble military capabilities and build combat power in the theater of operations and should be considered an operational mission. The supported combatant commander is responsible for this mission, which includes all actions needed to make arriving forces operationally ready to perform mission essential tasks.*

Joint Reception, Staging, Onward Movement, and Integration (RSOI) is a critical part of a deployment operation. RSOI reassembles the personnel, equipment, and accompanying supplies deploying to a theater of operations into mission capable forces. Ground forces, unless making a forced entry, deploy separately – personnel by air and equipment and accompanying supplies by sea. Upon arrival in a theater of operations, they are, essentially, passengers and cargo with no, or very limited, combat or mission capability. While in this "deploying" status, the personnel are vulnerable to enemy actions, are not self-sustainable, and require life support as well as other logistical support. RSOI is the process by which these passengers and cargo are transformed back into combat or mission capable units. All deploying forces, regardless of the Service or type of unit, will undergo at least two of the RSOI functions – reception and integration.

Joint RSOI must be carefully planned and executed to reduce the vulnerability of the arriving resources and to build up essential military capability rapidly.

*Joint RSOI doctrine should establish when, where, and to whom control of deploying forces transfers, beginning when the elements of the unit depart home station until they complete integration into the force within the new theater.*

While unit personnel and equipment are deploying, commanders retain command, but control of the individual shipments is passed to the movement control system. Over time the unit commander regains control as the elements of the unit are reassembled at marshaling and staging areas in theater where they rebuild combat power (or mission capability).

*Joint RSOI doctrine should take into account the wide range of contingency deployments and the unique characteristics of the theaters where the deployments will occur.*

*Joint RSOI doctrine should incorporate procedures for coordinating U.S. requirements with the host nation(s) and any other Allied military or civilian organizations participating in the contingency that use the same facilities.*

Joint RSOI operations are necessary to some degree in all force deployments from the smallest Operations Other Than War (OOTW) in any theater to the conduct of two nearly simultaneous Major Regional Contingencies (MRCs). RSOI operations are accomplished in forward locations where military capabilities are needed to meet contingencies. Close coordination must be effected between the deploying military commands and the host nation government(s) that own the facilities of the theater LOC, and other military forces or civilian agencies responding to the contingency that will use the same facilities.

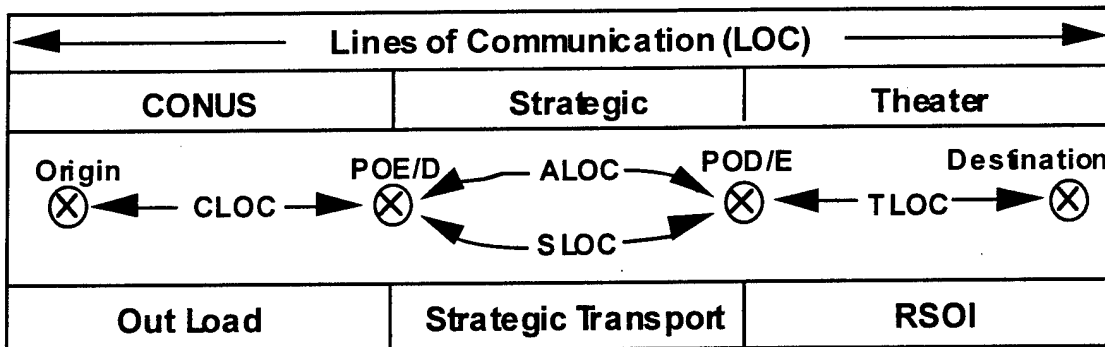
### **C. LINES OF COMMUNICATION**

The lines of communication consist of all the routes – land, water, and air – that connect an operating military force with a base of operations and along which supplies and military forces move. The LOC consists of a series of primary and supporting nodes where military support activities occur, connected by a series of links (e.g., main supply routes, channel airlift routes, rail lines).

## 1. Physical Composition of the LOC

*Joint RSOI doctrine should describe the composition of the entire LOC and clarify responsibilities for its operation among the combatant commands.*

As illustrated in Figure 1 below, the LOC is comprised of three principal segments: the CONUS segment, the strategic segment (air and sea LOCs – often referred to as the ALOC and SLOC), and the theater segment. The responsibility for operating nodes of the CONUS segment is shared by USTRANSCOM and its components and the U.S. Atlantic Command (USACOM) and its components.<sup>1</sup> Mode operation for the first two segments of the LOC – from home station to the Ports of Embarkation (POEs) and from the POEs to the Ports of Debarkation (PODs) – is a USTRANSCOM responsibility. Organic capability and commercial contracts negotiated by the Military Traffic Management Command (MTMC), using the extensive CONUS transportation infrastructure, provide most of the first segment's movement capability.



**Figure 1. Segments of the Lines of Communication**

For the strategic, middle segment, the Military Sealift Command (MSC) arranges military and commercial shipping to provide the strategic sealift capability, while the Air Mobility Command (AMC) provides the strategic airlift capability through a combination of organic airlift assets, contracted airlift, and/or airlift provided by the Civil Reserve Air Fleet (CRAF).

<sup>1</sup> Forward stationed commands have similar responsibilities when projecting forces to other theaters, as occurred when the U.S. European Command deployed forces to support U.S. Central Command during Operation Desert Shield/Storm.

The supported combatant command has responsibility for operating the nodes<sup>2</sup> and modes within the third segment, the theater LOC, which extends from the reception complexes forward to the final destinations in theater. The nodes and links of the theater LOC established to support U.S. operations use facilities and infrastructure that belong to one or more host nations. These nodes will normally consist of a number of primary nodes, such as reception complexes (aerial port complexes and water port complexes), and supporting nodes, such as Driver Holding Areas, Convoy Support Centers, Railheads, and Marshaling Areas. However, a single U.S. subordinate command is rarely tasked with overall responsibility for jointly planning and operating the theater portion of the LOC. Figure 2 below shows a typical theater LOC with its many primary and supporting nodes.

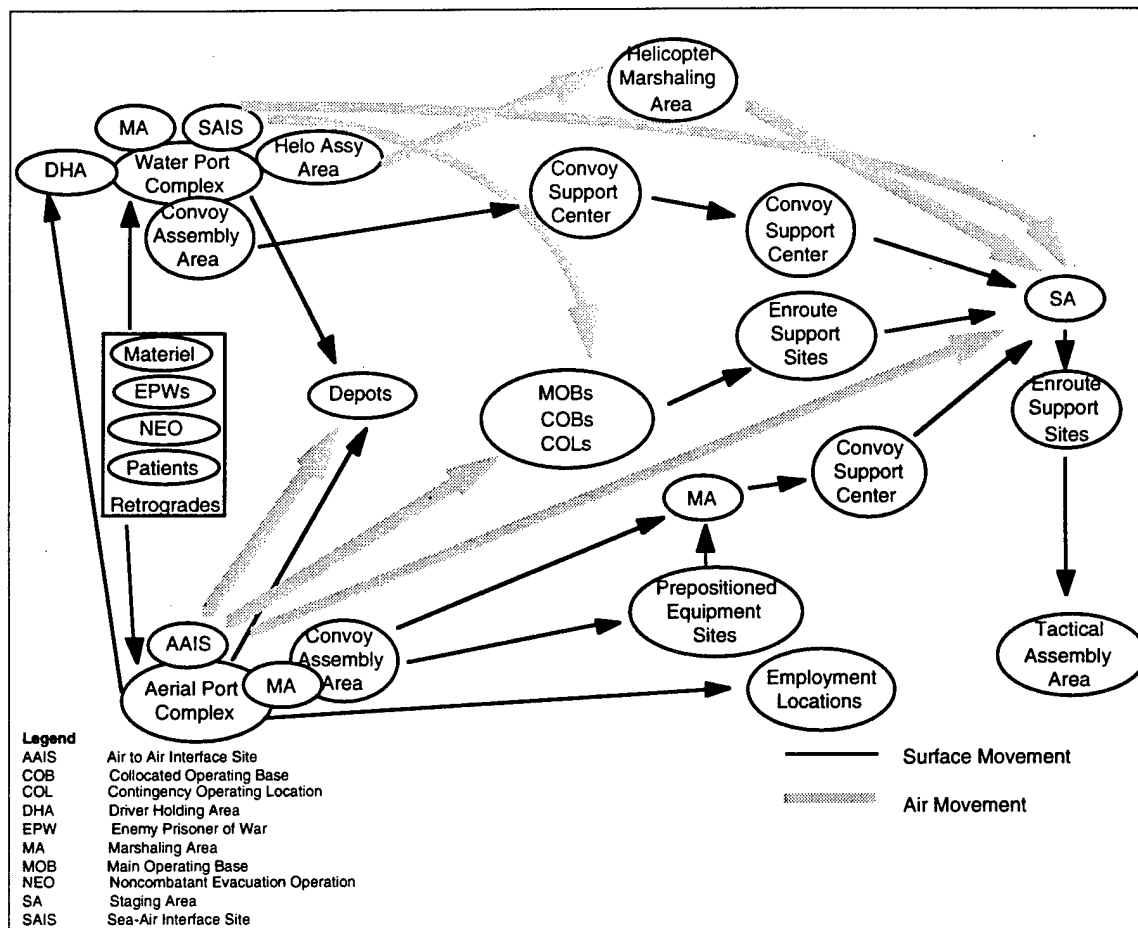


Figure 2. Notional Theater LOC

<sup>2</sup> USTRANSCOM has limited responsibilities for the node operations within the air and water terminals as documented in Command Arrangement Agreements.

## 2. Workloads of the Theater Lines of Communication

*Joint RSOI doctrine should clarify Service component RSOI requirements and responsibilities for conducting these operations to minimize duplication of effort and to ensure they respond to the requirements of the supported combatant commander.*

RSOI functions take place at a series of primary and supporting nodes within the theater LOC. Primary nodes comprise the reception complexes where personnel and materiel first enter the theater. Some supporting nodes are located within the reception complexes, but they also are scattered throughout the theater LOC. Functions critical to the accomplishment of RSOI are performed at each of these nodes, and include:

- Cargo loading and unloading
- Container stuffing and unstuffing
- Transportation of personnel and materiel
- Provision of convoy support services
- Intermodal transfers
- Operation of marshaling, staging and service areas
- Traffic management and movement control
- Intransit Visibility (ITV) and force tracking
- Security of the theater LOC and of resources (personnel and cargo) within the LOC
- Life support for personnel in the LOC
- Operation of LOC facilities
- Provision of fuel, lubricants and other fluids, maintenance (including tires, wipers, lights) and emergency fire and recovery services for vehicles in the LOC
- Operation of firing ranges
- Route maintenance
- Facility maintenance.

Traditionally, the major provider of many common user RSOI services is the Army. Although Army forces are the principal users of RSOI services, the Marine Corps

and Air Force also require significant RSOI services, and the Navy and Coast Guard are occasional users.<sup>3</sup>

*Joint RSOI doctrine should recognize other simultaneous workloads the theater LOC performs and establish procedures to take these into account when identifying the nodes and routes needed for RSOI operation.*

The requirements that the LOC must support include three principal categories: the flow of forces, including unit personnel, equipment, and accompanying supplies; the flow of personnel and materiel needed to sustain the force; and the flow of retrograde personnel and materiel. This retrograde flow may include non-combatant evacuation operations (NEOs), medical evacuees, enemy prisoners of war, human remains, damaged unit equipment, reparable components, mail, and captured enemy equipment. In some situations, retrograde flows such as NEOs can occur even before the initial force deployment and sustainment operations begin.

### **3. Organizations That Operate the Theater LOC**

*Joint RSOI doctrine should identify the capabilities of organizations that will be needed to operate the nodes of the theater LOC, across a range of manning options. These options include using only U.S. military personnel, or using some combination of host nation support, contractor support, or support from the Allied military or civilian organizations with U.S. military capabilities.*

The three principal operational elements of the theater LOC are: node operators, mode operators, and movement controllers. Node operators perform activities at facilities on the LOC. Mode operators move personnel and equipment between the nodes. Movement controllers direct movements based on priorities established by the combatant commander, subject to the capabilities of the nodes and mode operators.

Procedures for conducting Joint RSOI must be established, and the organizations that will process flows in the theater LOC must be identified so that the theater LOC will support all demands placed on it. To create a functioning theater LOC, mode, node, and movement control organizations must be overlaid onto and integrated into the available infrastructure to process the workloads created by all of the flows in the LOC.

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<sup>3</sup> In some cases, particularly for operations other than war (OOTW), the U.S. military may provide RSOI services to Allied military units, to U.S. and other government organizations, to United Nations agencies, and to civilian organizations such as the International Federation of the Red Cross and Red Crescent Societies. Conversely, the U.S. military can receive support from these organizations, or from host nations and contractors.



#### 4. Reception Complexes

*Joint RSOI doctrine should clarify the responsibilities of the various U.S. organizations that plan and operate the reception complexes, establish criteria for effecting transitions from one organization to another, and provide procedures to effect a smooth hand-off during the transition.*

The majority of personnel and materiel will enter the theater through two types of reception complexes: Aerial Ports of Debarkation (APODs) and Seaports of Debarkation (SPODs). At a joint aerial port complex, the air terminal reception functions are normally performed by USTRANSCOM, specifically elements of the Air Mobility Command (AMC). During Operation Joint Endeavor, the responsibility for operating the air terminal transitioned from AMC to the Air Force component of the supported combatant command about 45 days after the operation was initiated.

At a joint water port complex, the water terminal reception functions are performed either by organizations from the Military Traffic Management Command, a USTRANSCOM component, using contracted support in a relatively benign environment, or by U.S. Army organizations in a potentially hostile environment. In the latter case, MTMC elements manage U.S. activities at the facility while U.S. Army organizations carry out operations that otherwise would be provided by contracted support. As contingency operations continue, the operations performed by the U.S. Army elements may transition to contracted support.

*Joint RSOI doctrine should avoid placing responsibility for loading and unloading military units on any particular Service, and, whenever possible, should stress that these operations are joint in nature.*

Joint Pub 4.0 states "each [military] Service has primary responsibility for loading and unloading its military units." This is not consistent with the "economy of operations" concept referred to in the same publication. To reduce potential duplication of capabilities, unloading of military units in theater should be the responsibility of the joint reception complex commander. Loading also should be a joint responsibility shared by the components and the joint complex command in accordance with priorities established by the combatant command.

*Joint RSOI doctrine should identify which organizational elements are responsible for specific RSOI functions accomplished within the reception complexes. Doctrine also should designate the joint reception complex commander and specify the command and control arrangements for all U.S. elements operating within or transiting the complexes.*

Within the reception complexes, but beyond the actual air and water terminals, RSOI support functions are the responsibility of the supported combatant command, falling mostly upon the Army component. Other components may have some responsibilities as well. These support operations include such functions as:

- Port clearance
- Movement control
- Liaison and/or coordination with the host nation or other organizations using the facility
- Operation of U.S. holding areas
- Security of U.S. resources
- Mode operations within the complex
- Medical evacuation
- Postal services
- Personnel replacement operations.

This split organizational structure creates several problems and raises a number of questions:

- Who is in control of the U.S. elements operating the complex and U.S. elements transiting the complex?
- Who assigns real estate to U.S. elements within the complex?
- Who controls use of U.S. resources within the complex, adjudicates U.S. priority conflicts, and coordinates U.S. priorities with those of other Allies?
- Who is responsible for providing life support for U.S. personnel transiting the complex?
- Who coordinates U.S. requirements for facilities and support within the complex with the host nation?
- Who consolidates reports on U.S. operations within the complex and sends them to higher authorities?

Many of the RSOI support functions are performed on an *ad hoc* basis by organizations, or portions of organizations, that may not be trained or equipped to perform them (such as Arrival/Departure Airfield Control Groups or Port Support Activities), or that have never worked with the other U.S. organizations assigned to the site.

## 5. Supporting Nodes of the Theater LOC

*Joint RSOI doctrine should identify all node types that a theater LOC is likely to require and specify the facilities and U.S. military organizational elements each will need to perform its RSOI functions. Doctrine also should identify alternative manning options and the minimum U.S. military capability that will be required to ensure effective command and control of U.S. operations.*

*USACOM, as the principal force provider, should play a leading role in coordinating combatant command and Service training for and exercising of Joint RSOI capabilities.*

Supporting nodes along the lines of communication facilitate deployment and sustainment of the force. As discussed above, reception complexes can incorporate a number of supporting nodes, but similar supporting nodes are also located throughout the LOC. They include prepositioned equipment storage sites, holding areas, transshipment and intermodal transfer points, and enroute support sites.

As with the reception complexes, the supported combatant commander is responsible for operating these nodes. These nodes will normally be operated by a single Service, but provide common RSOI services for all deploying U.S. forces. Currently, these nodes are likely to be operated on an *ad hoc* basis by elements of deploying U.S. organizations that may not have been trained or equipped to perform these critical functions. They also may be supported by the host nation, Allies, or contractors (e.g., the Logistics Civil Augmentation Program (LOGCAP))<sup>4</sup>.

*Joint RSOI doctrine should describe how the deploying unit flows should be task organized and sequenced through the nodes to reduce congestion, vulnerability, and life support requirements while accomplishing the supported combatant commander's tasking.*

The planned flow of forces into a theater must be balanced against the capabilities of the theater LOC to conduct simultaneous RSOI, sustainment, and retrograde operations. The force flows through the nodes of the theater LOC will be constrained by the capacities of the nodes and the capabilities of the modes. For example, units with prepositioned equipment should be deployed in the same task force configuration as the equipment will be issued. Moreover, only the minimum essential personnel needed to draw the equipment should be transported to the node to reduce congestion, vulnerability,

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<sup>4</sup> The Logistics Civil Augmentation Program (LOGCAP) is a U.S. Army program which contracts for contingency planning and base operations, life support, and other logistic support during contingencies.

and life support requirements at the site. The remainder of the unit personnel should be moved to the marshaling area in sufficient time to reassemble all elements of the unit, reestablish command *and control* of the unit, and move onward to its final destination in accordance with the supported combatant commander's plan.

#### **D. JOINT RSOI ORGANIZATIONAL STRUCTURE**

Title 10, U.S. Code (10 USC) provides combatant commanders with "authoritative direction" over logistics and control of resources and equipment. Joint Pub 0-2 (Unified Action Armed Forces (UNAAF)) authorizes them to organize their assigned forces to accomplish assigned missions. It also allows for the establishment of functional and component commands within the combatant commander's area of responsibility. In addition, Joint Pub 4.0 (Doctrine for Logistic Support of Joint Operations) states that combatant commanders should "ensure effectiveness and economy of operations and prevention or elimination of unnecessary duplication of facilities and overlapping of functions among the Service Component commands." Finally, Joint Pub 4.0 calls for a "single command authority to be responsible for logistics." The geographic combatant commands currently do not have a single commander, within their theater, designated to oversee Joint RSOI and planning for and operation of the theater LOC.<sup>5</sup> The majority of Joint RSOI functions are conducted on an *ad hoc*, Service-by-Service basis with the associated risk of duplication of effort and inefficiency.

##### **1. Theater Support Command/Joint Theater Support Command**

*Joint RSOI doctrine should describe a single organization within the theater – a Joint Theater Support Command (JTSC) – that can be established by the supported combatant commander and tasked with planning and operating the theater LOC and Joint RSOI.*

*Joint RSOI doctrine should describe differences in forward stationed and CONUS stationed geographic commands and provide JTSC models for each variation. Although the manning to provide theater LOC operations may not be assigned until a crisis occurs, the Joint Theater Support Command should exist within each geographical combatant commander's organization in peacetime.*

*Joint RSOI doctrine should specify that the JTSC commander reports directly to the combatant commander to ensure that the early entry port*

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<sup>5</sup> U.S. Central Command is an exception. The Deputy Commanding General of the U.S. Army Materiel Command is also designated as the Deputy Commanding General, 3rd U.S. Army, with responsibility for Joint RSOI when the command deploys to its AOR.

*and LOC opening packages are given appropriate consideration during deployment planning.*

*Joint RSOI doctrine should identify the JTSC commander as the Joint Rear Area Coordinator and ensure his organization can provide security for U.S. resources in the rear area, including the nodes and links of the theater LOC.*

*Authors of Joint RSOI doctrine should evaluate the proposed JTSC organization as well as others that can accomplish the mission and select and incorporate those most suited into joint RSOI doctrine.*

As specified by Public Law and associated joint doctrine, combatant commanders have the responsibility and authority to ensure their assigned organizations are capable of performing effective and efficient Joint RSOI.

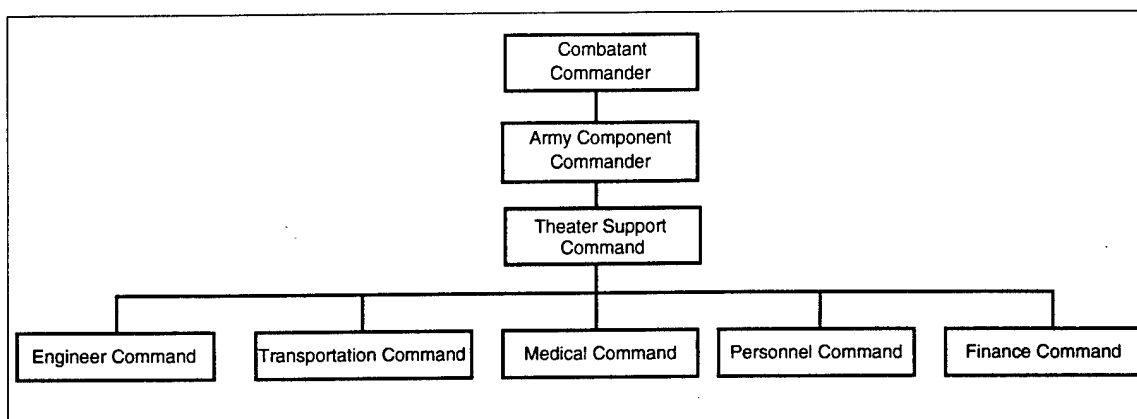
The resources of this Joint Theater Support Command can be task organized and incorporated into a Joint Task Force when one is established. Depending on the combatant commander's area of responsibility, and particularly on the size of the force and the nature and duration of the mission, this command could include only the Joint RSOI and LOC operations as a minimum, or be as comprehensive as centralizing all logistics and support functions under this single joint command.

Joint Pub 4.0 currently states that "whenever feasible, peacetime chains of command and staffs should be organized during peacetime to avoid reorganization during war." Some geographic combatant commands have a sizable forward stationed presence, while others are mostly located in CONUS.

The U.S. Army Combined Arms Support Command (CASCOM) has studied a concept that would centralize Army support functions within a theater of operations. This Theater Support Command (TSC) would be an Army-only command with joint headquarters manning for some functions. It would operate at echelons above corps and would report to the Army component command. The TSC would comprise the following subordinate functional entities: Theater Engineer Command, Theater Transportation Command, Theater Medical Command, Theater Personnel Command, and Finance Command. The concept, as written, does not specify the TSC's role in LOC planning, LOC operation, or any Joint RSOI functions. The organizational structure of the proposed CASCOM TSC is shown in Figure 3.

The geographic combatant commands would, in fact, benefit from such an organization; however, this Theater Support Command could function more effectively and more efficiently as a *Joint* Theater Support Command (JTSC) directly subordinate to

the combatant command rather than to a single Service component. The JTSC could be the organization designated to act as the combatant commander's "single command authority for logistics" as called for in Joint Pub 4.0. This command would serve as the single subordinate command responsible for planning and operation of the theater LOC and Joint RSOI functions.



**Figure 3. CASCOM Theater Support Command Organizational Structure**

In addition to being responsible for planning and operating the theater LOC and Joint RSOI functions, this command could be responsible for not only the functions suggested by the Army Theater Support Command (Engineering, Transportation, Medical, Personnel, and Finance) but also Signal, Materiel, Infrastructure Management, and Contracting. Combining these functions in a joint theater command would provide unity of effort under a single commander who then could ensure minimum duplication of facilities and overlapping of functions among Service components. The resources of this command would be task organized to support various contingencies, and in a combined operation could serve as the National Support Element for U.S. organizations participating in the operation.

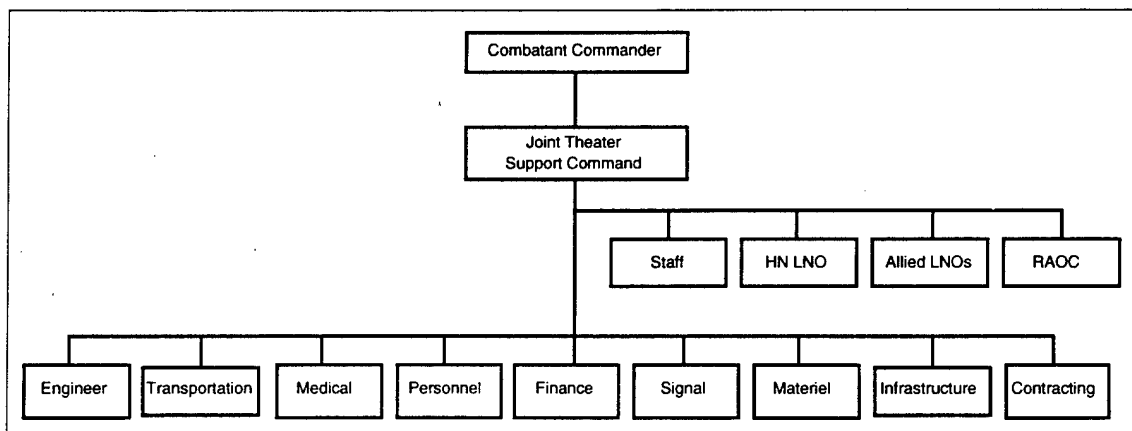
One possible organizational structure for the Joint Theater Support Command proposed in this document is depicted at Figure 4. The proposed Joint Theater Support Command can be implemented by tasking an existing organization (e.g., a Theater Army Area Command (TAACOM)) with responsibility for the joint mission and granting it sufficient authority and resources to accomplish the mission. It will be necessary to provide the command with joint headquarters manning and subordinate units, selected from each component, but it should be basically an issue of reorganization, not requiring any significant increase in force structure. These support functions are currently being performed on a Service by Service basis. Consolidating them under a JTSC should result in a reduction of duplication among the Services. During recent deployments, the LOC

and Joint RSOI functions were performed on an *ad hoc* basis and while usually effective, were not always efficient. Formalizing Joint RSOI relationships and task assignments should provide increased effectiveness and efficiency without increasing force structure.

Other theater functions currently performed on an *ad hoc* basis by offices or boards within the combatant command should be included in the assigned responsibility and authority of the JTSC. These include:

- Joint Transportation Board (JTB)
- Joint Civil-Military Engineering Board (JCMEB)
- Joint Facilities Utilization Board (JFUB)
- CINC Logistic Procurement Support Board (CLPSB)
- Theater Patient Movement Requirements Center (TPMRC)
- Joint Blood Program Office (JPBO)
- Joint Mortuary Affairs Office
- Joint Materiel Priorities and Allocation Board (JMPAB).

Combatant commanders are also responsible for protecting the U.S. force (and its resources), especially during the period when it is most vulnerable as it flows through the theater LOC. This is normally carried out through the Joint Rear Area Coordinator (JRAC). As the operator of the theater LOC, the JTSC commander could also serve as the JRAC.



**Figure 4. Proposed Joint Theater Support Command Organizational Structure**

## **2. Joint Movement Control**

*Joint RSOI doctrine should establish a Joint Movement Control Agency (JMCA) to ensure viable movement control and traffic management*

*functions within a combatant command's AOR. Organizational structure and procedures for this JMCA should be developed. This JMCA should be a separate organization, reporting to the combatant commander, on the same level as the Service Component commands and the Joint Theater Support Command.*

*Joint RSOI doctrine should specify that the Movement Control architecture be integrated into the theater LOC to ensure that the supported combatant commander can exercise control over U.S. personnel and materiel deploying into the theater, U.S. sustainment cargoes moving within the theater, retrograde cargoes, and U.S. personnel and materiel redeploying from the theater.*

Joint Pub 4-01.3 defines movement control as "the planning, routing, scheduling, and controlling of common-user assets, and maintaining of in-transit visibility to assist commanders and operations staffs in force tracking. It also includes reception and onward movement of personnel, equipment, and supplies over lines of communication in accordance with command directives and responsibilities." Joint doctrine provides the combatant commander with the authority to create a fully integrated joint organization to accomplish this function, and provides guidance for the establishment and organizational structure of a Joint Movement Center (JMC) and/or a Joint Transportation Board (JTB).

These organizations are usually formed on an as-needed basis and, when formed, actually have done little to control the movement of forces. Although joint doctrine states that the JMC is responsible for planning, apportioning, allocating, coordinating, deconflicting requirements, and force tracking, their primary role, when activated, has been to gather movement data and keep the combatant commander apprised of the movement of major combat units. The JTB, when activated, is responsible for reviewing, and deconflicting "policies, priorities, and apportionments beyond the authority of a JMC." When describing the functions performed by the JMC, joint doctrine uses terms such as "coordinate," "monitor," and "oversee" movement operations. Doctrine does not give the JMC the authority to direct the movement of forces within the combatant commander's AOR. Doctrine also does not address the role that a JMC should play in traffic management within the theater. The combatant commander needs an organization, such as a Joint Movement Control Agency (JMCA), with the authority to direct movements and enforce the movement priorities established by the combatant commander. Current doctrine allows the combatant commander to delegate authority for movements to the Service components under the "most capable Service" concept. The intent is to satisfy requirements at the lowest level possible and allow the theater combatant commander to focus on other critical issues. However, this does not always provide for the most effective or efficient use of resources. The establishment of a JMCA



provides "centralized control and decentralized execution," and should be able to execute the movement priorities established by the combatant commander more effectively.

The JMC – a staff activity of the combatant command – would relay the combatant command's priorities to the JMCA, which may be manned by Service component personnel or created from a Service movement control agency (MCA), such as a theater Army movement control agency (TAMCA). The JMCA would then execute the priorities using the mode tasking authority delegated to the agency by the combatant commander. The JMCA also would establish the movement control architecture to exercise control of the movement of units and other requirements in accordance with the combatant commander's priorities, and provide in-transit visibility (ITV) and force tracking information to the JMC.

## **E. JOINT RSOI TERMINOLOGY**

*Joint doctrine should include a glossary of internally consistent and accurate RSOI terminology. This terminology should be used for all Joint RSOI and theater LOC planning and operations.*

Currently there is no standardized, approved, joint terminology that describes the Joint RSOI process or the elements of a theater LOC. Much of the terminology used now during Joint RSOI and theater LOC planning and operations is Service-unique or created by staffs while planning and executing these operations. Services and geographic combatant commands use their own terms and definitions. Many basic terms are not defined, while others are ill-defined or defined in a non-relevant context.<sup>6</sup>

A possible starting point for compiling a Joint RSOI terminology is the draft doctrine (FM 100-17-3) under development by the Joint Deployment Training Center at Fort Eustis. Unfortunately, while this document contains a glossary of RSOI terms, it is an Army publication that will not be jointly staffed. A better starting point might be the Joint Tactics, Techniques and Procedures (JTTP) for Joint RSOI (Joint Pub 4-01.8) currently being drafted by the Mobility Concepts Agency (MCA). This draft publication is scheduled for release in March 1997. The Institute for Defense Analyses is also

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<sup>6</sup> For example, the term "marshaling area" is defined jointly both in terms of a location for a unit to prepare for loading on ships or aircraft and a location for assembling and holding equipment and supplies for command movements. Another example is the "ISB." Joint Pub 1-02 says that an ISB is an "Intermediate Staging Base," but does not offer a definition. The Army has recently started referring to an ISB as an "In-theater Staging Base" and describes it as performing a variety of Joint RSOI functions.

developing proposed Joint RSOI terminology as part of its study of Joint RSOI for the U.S. Atlantic Command and the U.S. Army Forces Command (FORSCOM). This study will be completed in the fall of 1996.

#### **F. JOINT AND COMBINED RSOI INFRASTRUCTURE**

*Joint RSOI doctrine should indicate that access to the U.S. share of available infrastructure and host nation support for operating the theater LOC should be the subject of host nation support agreements negotiated in peacetime, when possible, in anticipation of potential needs.*

*Joint RSOI doctrine should specify that the supported combatant command is responsible for negotiating host nation support agreements within the AOR. The proposed Joint Theater Support Command should be the supported combatant commander's principal agent for determining host nation support requirements for the theater LOC and Joint RSOI operations and coordinating them with the host nation(s).*

*Joint RSOI doctrine should identify the U.S. command and control arrangements for theater LOC operations and describe the coordinating mechanism subordinate commanders will use to ensure effective and responsive RSOI operations.*

Host nations own the infrastructure that U.S. forces require for operation of the theater LOC and to support the Joint RSOI process. They also own or have access to national transportation resources that can assist and support U.S. forces in operating the LOC and accomplishing Joint RSOI. The U.S. negotiates with the host nation to obtain access to the infrastructure and to arrange for the use of its transportation and other supporting resources. In case of a failed state, the U.S. would coordinate its use of necessary infrastructure with the appropriate United Nations representative. Only in the case of a forced entry might it be necessary to commandeer unilaterally the desired infrastructure and resources for U.S. use.

The size and composition of the U.S. supporting force needed to operate the theater LOC and to conduct RSOI operations will depend on the quality and extent of host nation infrastructure and on the amount and types of host nation support available at the time of the deployment. Unless the deployment is a forced entry operation, the host nation's cooperation and agreement to share facilities and infrastructure will be required to accomplish Joint RSOI and force sustainment. In most cases, it will be necessary to share the infrastructure and facilities with both host nation and Allied forces and organizations. In many cases, particularly at air bases, seaports and other fixed facilities, the facility operator will be a host nation national. In these cases, the combatant command or the proposed Joint Theater Support Command should designate a U.S.

commander to serve as the single point of contact for all U.S. operations at the node. This individual will coordinate all U.S. operations at the facility with appropriate host nation authorities and Allied organizations, and resolve priority and real estate conflicts among U.S. units operating in or transiting the facility.

*Joint RSOI doctrine should caution planners to adjust theoretical capacities of the host nation infrastructure and facilities to those which are likely to be made available for the contingency. Doctrine should identify U.S. military assets that might increase the available theater LOC capabilities and facilitate Joint RSOI operations.*

The capacities of infrastructure and facilities made available to U.S. forces are likely to be significantly less than the theoretical maximum because of set-asides for the host nation and Allied flows. If the host nation is not mobilized, military use of some facilities may compete with commercial operations and limit the rate at which the force and its sustainment can be deployed. Some of the shortfalls in the capabilities of the host nation's existing infrastructure might be reduced by employing U.S. military assets such as tactical pipelines and bridging, but this adds to the size of the deployment.

Even with pre-negotiated agreements in place, during an actual contingency the negotiated host nation support may not be made available. The providing nation may withhold its support because it is not mobilizing or because it elects not to participate in the operation.<sup>7</sup>

*Joint RSOI doctrine should identify the legal issues involved with deploying and employing forces in another nation's territory and provide guidance for complying with these requirements in both deliberate and crisis actions operations.*

Conducting operations in another nation's territory has a number of legal implications that must be resolved prior to deployment. Transit Agreements (TAs), Status of Forces Agreements (SOFAs), and Allied Cross Servicing Agreements (ACSAs) will be needed to allow U.S. forces to operate in the host nation(s).

*Joint RSOI doctrine should identify the types of support that might be furnished by host nations, contractors, and Allied military and civilian organizations that can be used to offset deploying U.S. military capabilities to operate the theater LOC and support RSOI operations.*

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<sup>7</sup> The Government of Saudi Arabia decision in September 1996 not to allow the U.S. to launch airstrikes against Iraq from Saudi airfields where U.S. aircraft were stationed to enforce the United Nations imposed zones in Iraq is a recent example of how political considerations can affect access to host nation facilities.

Host nation support to the U.S. operation can include transportation resources, loading and unloading personnel and equipment, life support, refueling, and other services. Transportation capabilities, for example, can be provided by host nation and Allied military units, by commercial contract (i.e. host nation, LOGCAP, or third nation support) as well as by U.S. military combat service support units. Host nation transportation resources, because they are already in place, are particularly useful in reducing the requirements for early deployment of U.S. transportation assets and should be used to the maximum extent possible for mode operation.

During contingencies involving humanitarian relief operations, United Nations agencies, International Organizations (IOs), Non-Governmental Organizations (NGOs), and Private Volunteer Organizations (PVOs) may have resources already deployed to the AOR. These capabilities should be identified during the joint assessment prior to the U.S. military deployment to minimize the size of the U.S. requirement to only that which is essential.

*Joint RSOI doctrine should include essential planning and coordination for establishing an Intermediate Staging Base (ISB) to support forced entry operations and the RSOI operations at that location as well as the transition to RSOI and sustainment operations after the forced entry has been successfully accomplished.*

The election not to make host nation support available is more likely in the case of third nation support and can particularly affect the use of an off-shore intermediate staging base or transit rights. In the case of forced entry, many Joint RSOI activities will take place in the safe haven of an Intermediate Staging Base (ISB) before entry into the AOR; other RSOI activities will occur in the objective area after the forced entry has been successfully executed. Support and access agreements also must be negotiated with the host nation in which the ISB is located.

## **G. JOINT RSOI PLANNING AND EXECUTION SYSTEMS**

*Joint RSOI doctrine should identify the need to assess the capability of the planned theater LOC to conduct simultaneous RSOI, sustainment, and retrograde operations in accordance with the supported commander's requirements before a deliberate or crisis action plan is judged to be feasible.*

A number of automated tools are currently available to assist staffs of combatant commands, their components, and other organizations involved with deployments. These tools enable them to plan and assess in detail the flows of personnel and materiel from origins to the theater reception facilities in the supported combatant command's AOR.

These tools are used to coordinate flows and available lift resources during the deliberate planning process at the movement and sustainment conferences hosted by USTRANSCOM, and form the basis for judging whether the deployment plan is feasible. These tools also are used to develop flows and coordinate lift for urgent requirements during crisis action planning and execution.

Because there is no joint doctrine to guide the development of a theater LOC and the RSOI, sustainment, and retrograde operations that it must perform, comparable automated tools are not available to assist the supported combatant command and its components with planning and assessing the feasibility of the deployment within the theater. Such a capability is needed to support both deliberate and crisis action planning.

## **1. Strategic Versus Theater Workload Planning**

*Joint RSOI doctrine should establish the requirement for a theater TPFDD and describe the level of detail that is required to accomplish theater LOC planning and execution of RSOI, sustainment, and retrograde operations.*

The time-phased force and deployment data (TPFDD) contained in the Joint Operation Planning and Execution System (JOPES) serves as the mechanism to enable the providing and functional combatant commands to coordinate their actions to meet the requirements of the supported combatant command. The TPFDD establishes the size, composition, and sequence for the movement requirements, and schedules the lift to meet the requirement.

The level of detail for data required by JOPES is satisfactory for planning and executing the strategic deployment to the theater. Because the system only identifies data fields for the POD and a final destination within the theater for each movement requirement, the strategic TPFDD does not provide adequate visibility into the flows through the multiple nodes of the theater LOC. These flows represent the workloads that must be processed by node operating organizations. Without visibility into these movements, the supported combatant command cannot identify the workloads at the nodes, plan the resources that will be needed to operate the theater LOC, or assess feasibility of the theater deployment prior to its execution.

*Authors of joint RSOI doctrine should consider the advantages of developing a theater LOC planning handbook to guide staff officers and senior commanders with this complex task.*

The supported combatant command needs a detailed *Theater* TPFDD to provide essential visibility into the flows planned through the theater LOC, but there are no guidance documents or automated tools to assist the staffs with this complex planning task. When RSOI doctrine is developed, it should be possible to develop automated support tools, but this task will take time and resources to complete. Authors of Joint RSOI doctrine should consider developing a theater LOC planning handbook to provide detailed guidance to staffs and senior commanders involved with RSOI operations while the automated tools are being developed. This handbook also could serve as a text for training future joint and Service staff officers at selected Joint and Service schools, and provide a basis for automating the process.

## **2. Transportation-Related Information Requirements**

*Joint RSOI doctrine should specify the type of transportation-related information, the currency of the information, and the level of detail that is required to plan and conduct RSOI operations.*

Detailed transportation-related information is needed to support theater LOC planning so that RSOI operations can be carried out in a timely, effective, and efficient manner. Much of this information is available in unclassified form because it also is needed for commercial operations, but other information, such as host nation support agreements, may be sensitive or classified. While several U.S. organizations currently collect transportation data, there is no organization designated to serve as the focal point for establishing which data are required or how the data are to be processed into useful information and distributed to planners in a timely manner.

## **3. RSOI Execution Information Requirements**

*Joint RSOI doctrine should provide a comprehensive definition of force tracking and specify the data and information requirements needed to accomplish the task.*

When deployment execution begins, commanders, staffs, and organizations operating the theater LOC require information that indicates what has happened; more importantly, they require information to help predict what might happen so that necessary actions can be taken to avoid delays, congestion, and vulnerability while the RSOI, sustainment, and retrograde operations are underway. Timely and accurate execution information also is needed to enable commanders and staffs to modify the planned flows in response to the changing tactical situation.

In-transit visibility (ITV) and force tracking information are the key ingredients required during execution. ITV information tracks the identity, status, and location of unit and non-unit cargo, passengers, medical patients, and personal property from origin to destination. ITV is an integral part of the Defense Transportation System. Force tracking information includes information on the location, status, and predicted movement of each element (unit line numbers in the TPFDD) of a unit while it is in-transit between its origin and the location where it completes integration. Force tracking information also provides commanders and staff with current and projected readiness of units and forces, and predicts when they will be ready to conduct mission essential tasks. The current joint definition of force tracking is not comprehensive, and its data requirements are not included in any collection and reporting system.

*Joint RSOI doctrine should specify the data collection, information processing, and exchange requirements among the various headquarters involved with the operation of the theater LOC as well as RSOI, sustainment, and retrograde operations.*

ITV and force tracking information will be required by both the proposed JTSC and the JMCA so that RSOI, sustainment, and retrograde operations can be controlled during execution. The movement control architecture established from the elements assigned to the JMCA is the primary source for collecting and reporting the data during these operations. The JMCA will need to process and disseminate the information to a number of headquarters, including the JMC and JTSC as well as Service component commands. The JTSC commander and his subordinate commanders operating the theater LOC also require additional information to coordinate rear area protection of the theater LOC.

**APPENDIX A**  
**ACRONYMS**



## APPENDIX A

### ACRONYMS

ACSA	Allied Cross Servicing Agreement
AAIS	Air to Air Interface Site
ALOC	Air Lines of Communication
AMC	Air Mobility Command
AOR	Area of Responsibility
APOD	Aerial Port of Debarkation
ASMP	Army Strategic Mobility Program
CASCOM	Combined Arms Support Command
CLPSB	CINC Logistics Procurement Support Board
COB	Collocated Operating Base
COL	Contingency Operating Location
CONUS	Continental United States
CRAF	Civil Reserve Air Fleet
DHA	Driver Holding Area
EPW	Enemy Prisoner of War
FM	Field Manual
FORSCOM	Forces Command (U.S. Army)
IDA	Institute for Defense Analyses
ILA	Intratheater Lift Analysis
IO	International Organization
ITV	Intransit Visibility
ISB	Intermediate Staging Base; In-Theater Staging Base
JBPO	Joint Blood Program Office
JCMEB	Joint Civil - Military Engineering Board
JDTC	Joint Deployment Training Center
JFUB	Joint Facilities Utilization Board
JMC	Joint Movement Center
JMCA	Joint Movement Control Agency
JMPAB	Joint Materiel Priorities and Allocation Board
JOPES	Joint Operation Planning and Execution System
JRAC	Joint Rear Area Coordinator
JTB	Joint Transportation Board
JTSC	Joint Theater Support Command
JTTP	Joint Tactics, Techniques and Procedures

LMSR	Large Medium Speed Roll-on/Roll-off Vessel
LOC	Lines of Communication
LOGCAP	Logistics Civil Augmentation Program
MA	Marshaling Area
MCA	Mobility Concepts Agency
MOB	Main Operating Base
MRC	Major Regional Contingency
MRS BURU	Mobility Requirements Study - Bottom Up Review Update
MSC	Military Sealift Command
MTMC	Military Traffic Management Command
NEO	Noncombatant Evacuation Operation
NGO	Nongovernmental Organization
OOTW	Operation Other Than War
POD	Port of Debarkation
POE	Port of Embarkation
PVO	Private Volunteer Organization
RSOI	Reception, Staging, Onward Movement and Integration
SA	Staging Area
SAIS	Sea-Air Interface Site
SLOC	Sea Lines of Communication
SOFA	Status of Forces Agreement
SPOD	Seaport of Debarkation
TA	Transit Agreement
TAACOM	Theater Army Area Command
TPFDD	Time Phased Force and Deployment Data
TPMRC	Theater Patient Movement Requirements Center
TSC	Theater Support Command
UNAAF	Unified Action Armed Forces
USACOM	U.S. Atlantic Command
USC	United States Code
USTRANSCOM	U.S. Transportation Command

**APPENDIX B**  
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